WWW.TECHGROW.NL

TechGrow
T-1 CO_2 CONTROLLER

with external CO_2 sensor, light sensor and calibration function

MANUAL

software version: 2.20

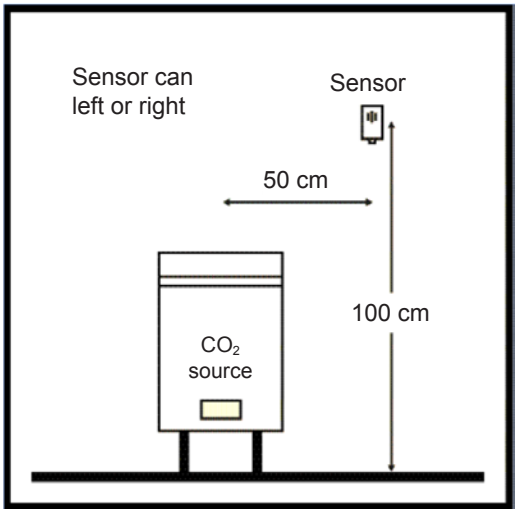
TechGrow T-1
user manual

CONGRATULATIONS!
You have purchased the TechGrow T-1 CO_2 controller. This controller is very easy to use and is by far the best in its class thanks to its fully digital technology and revolutionary Push & Turn controls.

SPECIAL FEATURES:
- Can be used in both small as well as very large rooms, Plug & Play.
- Adjustable from 300 to 2000 ppm.
- Extremely accurate external CO_2 sensor, manufactured by SenseAir® Sweden, the absolute market standard for CO_2 measurements.
- The CO_2 sensor has a built-in light sensor that automatically switches between day and night settings.
- The sensor performs a new measurement every second.
- Turns the CO_2 source (CO_2 generator, CO_2 cylinder) on/off via a 220V relay.
- Automatically detects whether the CO_2 sensor is properly connected. (i.e. broken cable, bad connection).
- Connection of the sensor via regular network cable (UTP). Comes equipped with 5 meters of cable. The supplied cable can be replaced by a longer UTP cable (maximum length 20 meters, do not use repeaters).
- Modern blue and white display with automatic background lighting. Display lighting turns off automatically after 30 seconds.
- Automatic 110V - 230V detection.
- Power interruption memory for: setpoint and hysteresis.
- LED indicator turns on when CO_2 is dosed.
- Built-in calibration function to adjust the CO_2 sensor for outdoor. Before using the calibration function, please read the instructions carefully.

INSTALLATION:

1. 1. It is recommended to mount the CO_2 sensor on a wall close to the CO_2 source, with a minimum distance of 50 cm. It is not advisable to place the sensor directly over the CO_2 source if that source can reach very high temperatures (CO_2 generator). The sensor must be placed about 1 meter above the floor. For this, use the enclosed mounting bracket.



ATTN: please make sure the light sensor (the milk-colored cap on top of the CO_2 sensor) can absorb any light directly and is not obstructed by e.g. shelves or fixings, as it will not be able to differentiate between night and day!

2. Also mount the TechGrow T-1 controller on the wall with the enclosed bracket.

3. Connect the sensor to the TechGrow T-1 controller with the supplied UTP cable.

4. Plug the CO_2 source into the socket of the TechGrow T-1 controller.

5. Plug the TechGrow T-1 controller in to a 230V wall socket.

6. Ready!

RESET MEMORY MIN./MAX. CO_2 VALUES:

- If there is no arrow (=>) or blinking square ▓ on the display,
  please press the Push & Turn button for 4 seconds. Min./max. values will be replaced by the current CO_2 level.

OPERATING AND ADJUSTING THE TECHGROW T-1 CONTROLLER:

All the settings are adjusted using the Push & Turn Button (PTB).
You enter the menu by briefly pushing the button.
An arrow appears on the left side of the display.
If you rotate the button now, the arrow will alternately switch between CO_2 set to CO_2 +/- and back again.

SETTING SETPOINT:

- Push the PTB once (image 2). An arrow (=>) appears on the display of the value CO_2 set.
- Push the PTB again (image 3). A blinking square ▓ appears in front of the CO_2 value.
- You can set the desired CO_2 level using the rotary button (image 4).
- Confirm this value by pushing the PTB, or wait 5 seconds for automatic confirmation (image 5).

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ADJUSTING HYSTERESIS (BANDWIDTH):

- Push the PTB once (image 2). An arrow (=>) appears on the display next to CO_2 set.
- Use the rotary button to move the arrow (=>) in front of CO_2 +/- (image 3).
- Push the PTB once for confirmation (image 4). A blinking square ▓ appears in front of the CO_2 values.
- You can set the desired CO_2 hysteresis by using the rotary button (image 5) (advised: 0050 ppm).
- Confirm this value by pushing the PTB or wait a couple of seconds for automatic confirmation (image 6).

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OPERATING THE TECHGROW T-1 CONTROLLER:
If the CO_2 value of the room drops below the set value (setpoint), the CO_2 source will be activated. After a while, the CO_2 value will rise and when the CO_2 set value has been reached, the source will be deactivated again.

EXAMPLE:
The CO_2 set is at 670.
The CO_2 +/- is at 40.

The current CO_2 value in the room is for example 733, which is higher than the CO_2 set, so the CO_2 source is deactivated. The red light is turned off.

The CO_2 gradually starts to drop to 670: still nothing happens.
Only when the value drops below the CO_2 set minus the CO_2 +/-, which in this case is 670 – 40 = 630, the CO_2 source is activated and the light turns on.

The CO_2 is now rising and, as soon as the value of 670 has been reached, the CO_2 source is deactivated.

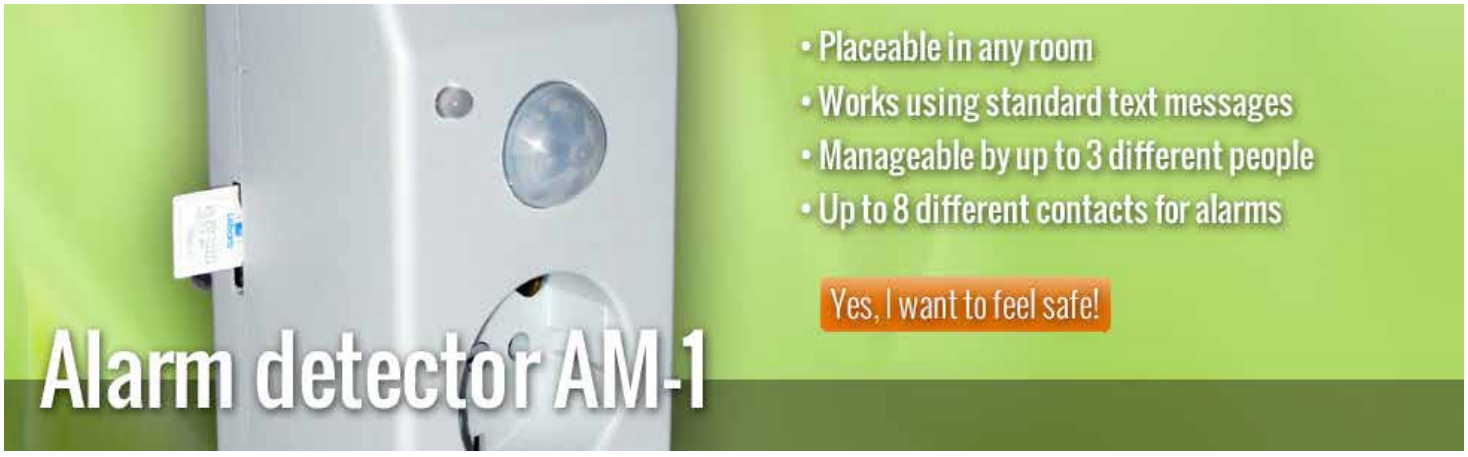
By adjusting the CO_2 +/-, a quiet and stable atmosphere can be obtained. The factory default for the CO_2 set is 700 and the CO_2 +/- is set to 50.

AUTOMATIC FUNCTIONS OF THE TECHGROW T-1 CONTROLLER:
1. If no CO_2 sensor is connected to the TechGrow T-1 controller, the display will show **NO CO_2 SENSOR**, and the CO_2 value will automatically be set to 9999, in order to keep the CO_2 source deactivated.
2. At night (when the lights are off), when the light sensor detects very little light or no light at all, the CO_2 source is ALWAYS deactivated. That is why it is very important that the light sensor can directly see any light source! Otherwise, you would be unable to dose any CO_2 during the day (when the lights are on), because the TechGrow T-1 controller would think it is night!
3. The display backlight turns off automatically after 30 seconds. Only when the button is pushed or turned will the display light up again.

TECHNICAL SPECIFICATIONS:

Power supply:	110 or 230 Volt (automatic)
Consumption:	3 Watt (with sensor, without CO_2 source)
Adjustment range CO_2 set:	300 to 2000 ppm
Adjustment range CO_2 +/-:	10 to 200 ppm (advice 50 ppm) (hysteresis bandwidth)
Measurement time:	1 measurement per second

Notes


• Placeable in any room
• Works using standard text messages
• Manageable by up to 3 different people
• Up to 8 different contacts for alarms
Yes, I want to feel safe!
Alarm detector AM-1

• Back-up for up to 24 hours
• Works with any 12 Volt car battery
• Installed in a couple of minutes
• Optional: Mobile phone feedback module
Yes, I want to sleep peacefully!
Powerbox PB-600

• Plug & Play
• Clear menu
• Built-in calibration function
• Built-in CO_2 sensor
Yes, I want to increase my growth
CO_2 Controller T-Mini